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line of quality products includes:

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microTALK® Radios

Radar/Laser Detectors

Safety Alert® Traffic Warning Systems

Accessories

GPS (Global Positioning System)

HighGear® Accessories

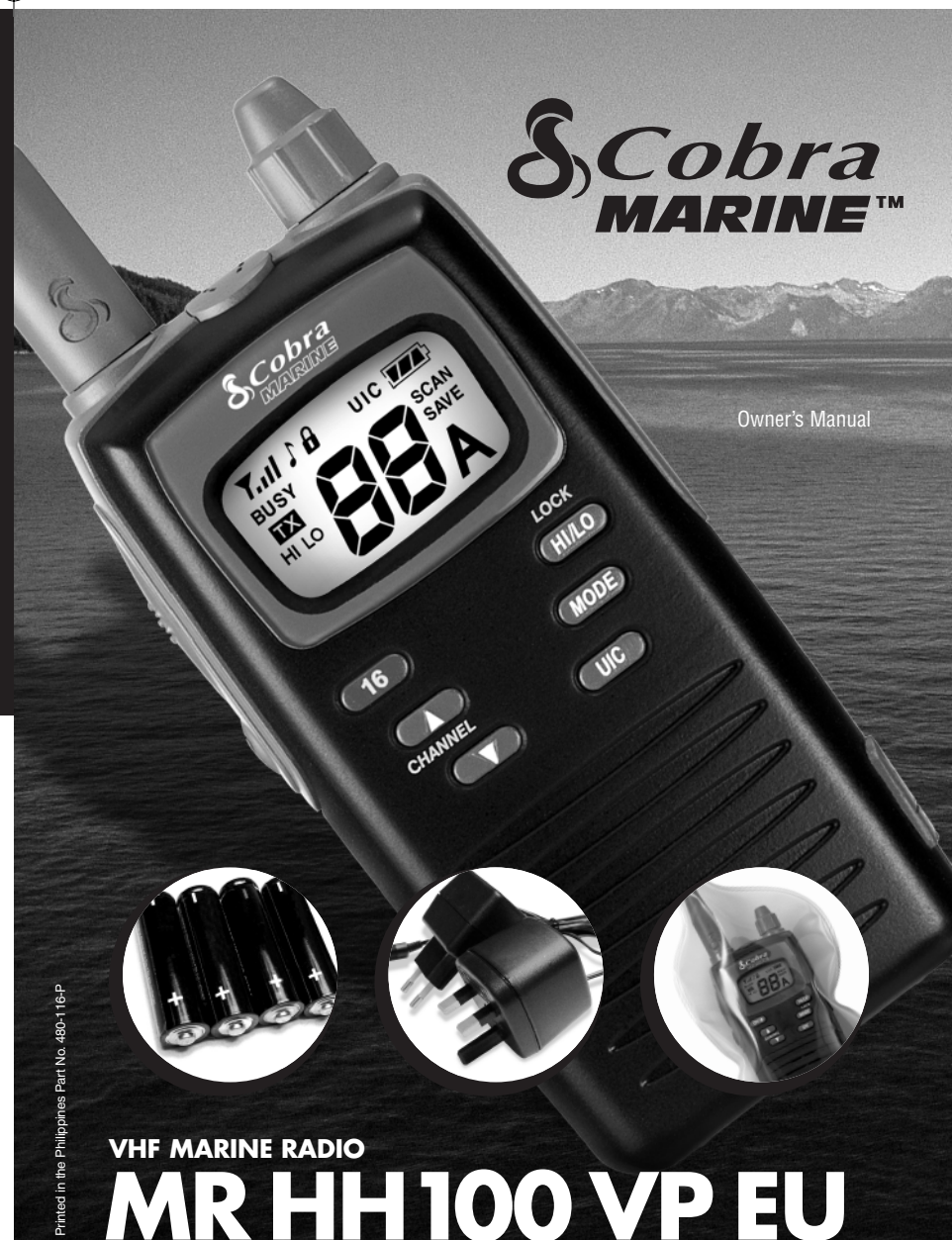
CobraMarine™ VHF Radios

Power Inverters

For more information or to
order any of our products,
please visit our website:
www.cobra.com

Nothing comes close to a Cobra®

English



Cobra
MARINE™

Owner's Manual

LOCK
HI/LO
MODE
UIC
16
CHANNEL

VHF MARINE RADIO
MR HH 100 VP EU

Printed in the Philippines Part No. 480-116-P

Nothing comes close to a Cobra®

English



Introduction

Our Thanks to You and Customer Assistance

Thank you for purchasing a CobraMarine™ VHF radio. Properly used, this product will give you many years of reliable service.

How Your CobraMarine™ VHF Radio Works

This radio is a battery powered portable transceiver for use afloat. It gives you 2-way vessel-to-vessel and vessel-to-shore station communications, primarily for safety and secondarily for navigation and operational purposes. With it, you can call for help, get information from other boaters, talk to lock or bridge tenders and make radiotelephone calls to anywhere in the world through a marine operator.



Customer Assistance

Customer Assistance

Should you encounter any problems with this product, or not understand its many features, please refer to this owner's manual. If you require further assistance after reading this manual, please contact your local dealer.



NOTE

Your equipment will be black. White images are shown in this manual for illustration purposes only.

This equipment is intended for use in:

- | | | | |
|--|--|--|--|
| <input checked="" type="checkbox"/> AT | <input checked="" type="checkbox"/> FI | <input checked="" type="checkbox"/> LT | <input checked="" type="checkbox"/> PT |
| <input checked="" type="checkbox"/> BE | <input checked="" type="checkbox"/> FR | <input checked="" type="checkbox"/> LV | <input checked="" type="checkbox"/> SE |
| <input type="checkbox"/> CY | <input checked="" type="checkbox"/> GB | <input checked="" type="checkbox"/> LI | <input checked="" type="checkbox"/> CH |
| <input checked="" type="checkbox"/> CZ | <input checked="" type="checkbox"/> GR | <input checked="" type="checkbox"/> LU | <input type="checkbox"/> SI |
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| <input checked="" type="checkbox"/> DK | <input checked="" type="checkbox"/> IE | <input checked="" type="checkbox"/> NL | <input type="checkbox"/> TR |
| <input checked="" type="checkbox"/> EE | <input checked="" type="checkbox"/> IS | <input checked="" type="checkbox"/> NO | |
| <input checked="" type="checkbox"/> ES | <input checked="" type="checkbox"/> IT | <input checked="" type="checkbox"/> PL | |

For Warranty, Product Service and Accessory Information

Please contact your local dealer or distributor. See the enclosed leaflet that provides contact information for the CobraMarine™ international distributors.

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Introduction

Controls and Indicators

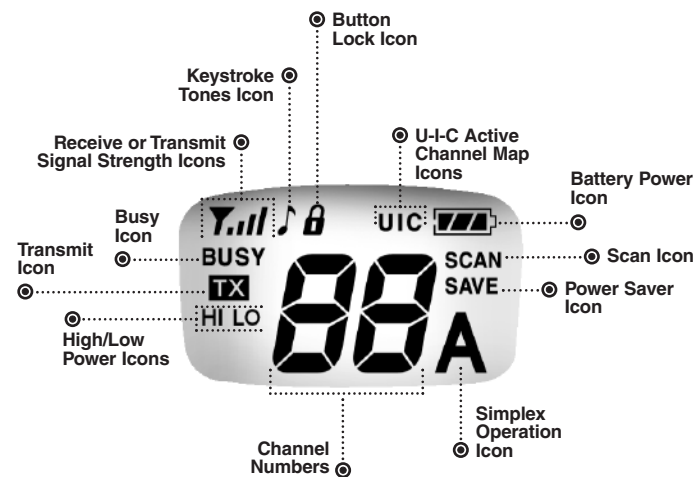


A2 English

Introduction

Backlit LCD Screen and Product Features

Backlit LCD (Liquid Crystal Display) Screen



Product Features

Dual Power

Selectable to 500 mW or 2 watts output power for near or distant calling.

International/Canada/U.S.A. Channels

Allows operation on any of the three different channel maps established for these areas.

Splashproof

Water resistant — meets JIS4 Standards.

Channel Scan

Lets you scan through all channels to find conversations in progress.

Button Lock

Prevents accidental changes to your settings when you set this feature.

Instant Channel 16

Instant access to priority Channel 16.

Power Saver

Uses battery saver circuitry to extend the life of your batteries.

Keystroke Tones

Can be turned **On** or **Off**.

Waterproof Pouch

Makes the unit completely waterproof (one pouch per radio included).

Four AAA Rechargeable NiMH Batteries Included

Provides extended operating time compared to alkaline batteries with no memory effect (one set of batteries per radio included).

Wall Mount Charger Included

Lets you charge the batteries right in the radio (one charger per radio included). In addition, a UK-compatible connector is included.

A3 English

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Installation

Included in this Package	22
Wrist Strap, Belt Clip, Spkr/Mic Jack and Waterproof Pouch	23
Batteries and Charger Jack	25



Operating Your Radio

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Important Safety Information

Important Safety Information

Before assembling and using your CobraMarine™ VHF radio, please read these general precautions and warnings.

Warning and Caution Statements

To make the most of this radio, it must be assembled and used properly. Please read the assembly and operating instructions carefully before assembling and using it. Special attention must be paid to the **WARNING** and **CAUTION** statements in this manual.



WARNING

Statements identify conditions that could result in personal injury or loss of life.



CAUTION

Statements identify conditions that could cause damage to the radio or other equipment.

General Precautions

The following **WARNINGS** and **CAUTIONS** will make you aware of RF exposure hazards and how to assure you operate the radio within the recommended RF exposure limits established for it.



WARNINGS

Your radio generates electromagnetic RF (radio frequency) energy when it is transmitting. To ensure that you and those around you are not exposed to excessive amounts of that energy:

ALWAYS hold the radio at least 5 cm away from you when you are transmitting.

NEVER allow the antenna to touch any part of your body when transmitting.

KEEP the radio at least as far from bystanders as from yourself.

DO NOT transmit more than 50% of the time the radio is in use.

ALWAYS use only Cobra Electronics Corporation™ authorized accessories (batteries, belt clips, chargers, etc.)

DO NOT operate the radio in an explosive atmosphere, near blasting sites, or in any area where signs are posted prohibiting radio transmissions.

DO NOT allow children or anyone unfamiliar with proper procedures to operate the radio without supervision.

Important Safety Information



CAUTIONS

Your radio is only splashproof when the batteries are properly installed.

AVOID using or storing the radio at temperatures below -20°C or above 60°C.

KEEP your radio at least 1 m away from your vessel's magnetic navigation compass.

DO NOT attempt to service any internal parts yourself. Have any necessary service performed by a qualified technician.

This radio is supplied with four NiMH (Nickel-Metal Hydride) rechargeable batteries.

- Use only the CobraMarine™ charger to recharge NiMH batteries in the radio.
- Do not short circuit the batteries.
- When replacing the batteries, dispose of the old batteries properly. NiMH batteries may explode if disposed of in a fire.
- The charger is to be used for charging purposes only. It is not to be used during normal operation.

Changes or modifications to your radio MAY VOID its compliance with government rules and make it illegal to use.



Recommendations for Marine Communication

Recommendations for Marine Communication

The frequencies your radio uses are set aside to enhance safety afloat and for vessel navigation and operational messages over a range suitable for nearshore voyages. If the 2 watt maximum output of your radio isn't sufficient for the distances you travel from the coast, consider purchasing a CobraMarine™ hand held radio with up to 5 watts of output power or installing a CobraMarine™ fixed mount radio with up to 25 watts of output power. (Visit www.cobra.com or your local dealer for model availability.)

If you will be going far offshore, you should consider adding even more powerful radio equipment such as HF single side band or satellite radio for your vessel.

The coastguard does not endorse mobile phones as substitutes for marine radios. They generally cannot communicate with rescue vessels and, if you make a distress call on a mobile phone, only the party you call will be able to hear you. Additionally, mobile phones may have limited coverage over water and can be hard to locate. If you don't know where you are, the coastguard will have difficulty finding you if you're using a mobile phone.

However, mobile phones can have a place on board where mobile coverage is available — to allow social conversations and keep the marine frequencies uncluttered and available for their intended uses.



Licensing Information

Licensing Information

The radio operates on all currently allocated marine channels and is switchable for use according to international, Canadian or U.S.A. regulations. It features instant access to emergency Channel 16 by pressing one key.

CobraMarine™ VHF radios comply with the U.S. FCC (Federal Communications Commission) requirements that regulate the Maritime Radio Service.

Station License

The UK requires a ships radio license and a marine radio operator's certificate before transmitting equipment can be used aboard a vessel. Other European countries have specific requirements of their own.

For detailed information and applications, contact the Radio Licensing Centre run by Royal Mail in the UK. In other countries contact the relevant national postal or telecommunications authority.

Canadian or U.S.A. Station License

If your vessel will be entering the sovereign waters of Canada or the U.S.A., you should contact Industry of Canada, Radio Regulatory Branch or the U.S. Federal Communications Commission for licensing and operating information.

Radio Call Sign

A radio call sign is included as part of the ships radio license in the UK. Other countries may have different practices; contact your local regulatory authority for information.

User Responsibility and Operating Locations

All users are responsible for observing domestic and foreign government regulations and are subject to severe penalties for violations. The VHF frequencies on your radio are reserved for marine use and require a special license to operate from land, including when your boat is on its trailer.



VHF Marine Radio Protocols

VHF Marine Radio Procedures

VHF Marine Radio Procedures

Maintain Your Watch

Whenever your boat is underway, the radio must be turned **On** and be tuned to Channel 16 except when being used for messages.

Power

Try ½ watt first if the station being called is within a few kilometres. If there is no answer, switch to a higher power. This will conserve your battery and minimize interference to other users.

Calling Coast Stations

Call a coast station on its assigned channel. You may use Channel 16 when you do not know the assigned channel.

Calling Other Vessels

Call other vessels on Channel 16. You may also call on ship-to-ship channels when you know that the vessel is listening on a ship-to-ship channel.

Limits on Calling

You must not call the same station for more than 30 seconds at a time. If you do not get a reply, wait at least 2 minutes before calling again. After three calling periods, wait at least 15 minutes before calling again.

Change Channels

After contacting another station on a calling channel, change immediately to a channel which is available for the type of message you want to send.

Station Identification

Identify your station by your call sign, ship name or other official number at both the beginning and end of each message.

Prohibited Communications

You **MUST NOT** transmit:

- False distress or emergency messages.
- Messages containing obscene, indecent or profane words or meaning.
- General calls, signals or messages (messages not addressed to a particular station) on Channel 16, except in an emergency or if you are testing your radio.
- When you are on land.



VHF Marine Radio Protocols

Voice Calling

Voice Calling

To call another vessel or a shore installation such as a lock or bridge tender:

- Make sure your radio is **On**.
- Select Channel 16 and listen to make sure it is not being used.
- When the channel is quiet, press the **Talk** button and call the ship you wish to contact. (Hold the radio at least 5 cm from your face and speak directly into it in a normal tone of voice — clearly and distinctly.) Say “[name of station being called] THIS IS [your vessel’s name or call sign]”.
- Once contact is made on the calling channel, you must switch to a proper working channel. See the channel listing on pages 12 – 21.

For Example

The vessel Corsair calling the vessel Vagabond:

Corsair: “Vagabond, this is Corsair.”

Vagabond: “Corsair, this is Vagabond. Reply 72 (or any proper working channel).”

Corsair: “72.” or “Roger.”

- After communications are completed, each vessel must sign off with its call sign or vessel name and switch to Channel 16.



NOTE

For the best sound quality at the station you’re calling, hold the radio at least 5 cm from your mouth and slightly off to one side. Speak in a normal tone of voice.

Radiotelephone Calls

Radiotelephone Calls

Boaters may make and receive radiotelephone calls to and from any number on the telephone network by using the services of public coast stations. Calls can be made — for a fee — between your VHF radio and telephones on land, sea and in the air. See pages 12 – 21 for the public correspondence (marine operator) channels.

If you plan to use these services, consider registering with the operator of the public coast station that you plan to work through. Those services can provide you with detailed information and procedures to follow.



CAUTION

You may disclose privileged information during a radiotelephone call. Keep in mind that your transmission is **NOT** private, as it is on a regular telephone. Both sides of the conversation are being broadcast and can be heard by anyone who has a radio and tunes to the channel you are using.

Emergency Messages and Distress Procedure

The ability to summon assistance in an emergency is the primary reason to have a VHF marine radio. The marine environment can be unforgiving, and what may initially be a minor problem can rapidly develop into a situation beyond your control.

The coastguard monitors Channel 16, responds to all distress calls and coordinates all search and rescue efforts. Depending on the availability of other capable vessels or commercial assistance operators in your vicinity, coastguard or coastguard auxiliary craft may be dispatched.

In any event, do communicate with the coastguard as soon as you experience difficulties and before your situation becomes an emergency. Use the emergency message procedures only after your situation has become grave or you are faced with a sudden danger threatening life or property and requiring immediate help. If you are merely out of fuel, do not send an emergency message. Drop your anchor and call a friend or marina to bring the fuel you need or give you a tow.

Emergency Messages and Distress Procedure

Marine Emergency Signals

The three spoken international emergency signals are:

MAYDAY

The distress signal **MAYDAY** is used to indicate that a station is threatened by grave and imminent danger and requests immediate assistance.

PAN PAN

The urgency signal **PAN PAN** is used when the safety of the vessel or person is in jeopardy. (This signal is properly pronounced pahn-pahn.)

SECURITE

The safety signal **SECURITE** is used for messages about the safety of navigation or important weather warnings. (This signal is properly pronounced see-cure-it-tay.)

When using an international emergency signal, the appropriate signal is to be spoken three times prior to the message.

If You Hear a Distress Call

You must give any message beginning with one of these signals priority over any other messages. **ALL** stations **MUST** remain silent on Channel 16 for the duration of the emergency unless the message relates directly to the emergency.

If you hear a distress message from a vessel, stand by your radio. If it is not answered, **YOU** should answer. If the distressed vessel is not nearby, wait a short time for others who may be closer to acknowledge. Even if you cannot render direct assistance, you may be in a position to relay the message.



VHF Marine Radio Protocols

Emergency Messages and Distress Procedure

Marine Distress Procedure

Speak slowly — clearly — calmly.

1. Make sure your radio is **On**.
2. Select VHF Channel 16.
3. **Press Talk button and say:**
 “MAYDAY — MAYDAY — MAYDAY”
 (or “PAN PAN — PAN PAN — PAN PAN”
 or “SECURITE — SECURITE — SECURITE”)
4. **Say:**
 “THIS IS [your vessel name or call sign].”
5. **Say:**
 “MAYDAY” (or “PAN PAN” or “SECURITE”)
 [your vessel name or call sign].
6. **Tell where you are:**
 (Your position or what navigational aids or landmarks are near.)
7. State the nature of your distress.
8. State the kind of assistance needed.
9. Give number of persons aboard and conditions of any injured.
10. Estimate present seaworthiness of your vessel.
11. Briefly describe your vessel (length, type, colour, hull).
12. **Say:**
 “I WILL BE LISTENING ON CHANNEL 16.”
13. **End message by saying:**
 “THIS IS [your vessel name or call sign] OVER.”
14. Release **Talk** button and listen. Someone should answer.
 If not, repeat the call, beginning at item 3 above.

For medical problems such as crew hit by sailboat boom or heart trouble, make a PAN PAN call as above with the word medico added.

“PAN PAN MEDICO — PAN PAN MEDICO — PAN PAN MEDICO”

The coastguard will try to link you to a doctor who can give expert advice and evaluate the need for evacuation.



VHF Marine Radio Protocols

Emergency Messages and Distress Procedure

Keep the radio nearby. Even after your message has been received, the coastguard can find you more quickly if you can transmit a signal for a rescue boat to home in on.

For Example

“Mayday — Mayday — Mayday”
 “This is Corsair — Corsair — Corsair”
 “Mayday Corsair”
 “Point Lynas bears 220 degrees magnetic — distance 8 kilometres”
 “Struck submerged object and flooding — need pump and tow”
 “Four adults, three children aboard — no one injured”
 “Estimate we will remain afloat one-half hour”
 “Corsair is an 8 metre sloop with blue hull and tan deck house”
 “I will be listening on Channel 16”
 “This is Corsair”
 “Over”

It is a good idea to write out a script of the message form and post it where you and others on your vessel can see it when an emergency message needs to be sent.



VHF Marine Radio Protocols

VHF Marine Channel Assignments

VHF Marine Channel Assignments

Three sets of VHF channels have been established for marine use internationally, in the U.S.A. and in Canada. Most of the channels are the same for all three maps, but there are definite differences (see table on the following pages). Your radio has all three maps built into it and will operate correctly in whichever area you choose. When shipped from the factory, your radio will be set to the International Channel Map. (See page 28 for instructions on how to change the Channel Map.)

The following is a brief outline of the channel assignments in the International Channel Map.

Distress, Safety and Calling

Channel 16

Getting the attention of another station (calling) or in emergencies (distress and safety).

Intership Safety

Channel 6

Ship-to-ship safety messages and for search and rescue messages to coastguard ships and aircraft.

On-Board Communication

Channel 15

Used for communication between parts of large ships.

Non-Commercial

Channels 68, 72

Working channels for small vessels. Messages must be about needs of the vessel, such as fishing reports, berthing and rendezvous. Use Channel 72 only for ship-to-ship messages.



VHF Marine Radio Protocols

VHF Marine Channel Assignments

Commercial

Channels 8, 9, 10, 11, 17, 67, 88, 88A

Working channels for working ships only. Messages must be about business or needs of the ship. Use Channels 8, 67, 88 and 88A only for ship-to-ship messages.

Public Correspondence (marine operator)

Channels 1, 2, 3, 4, 5, 7, 23, 24, 25, 26, 27, 28, 60, 61, 62, 63, 64, 65, 66, 78, 82, 84, 85, 86, 87, 88

For calls to marine operators at public coast stations. You can make and receive telephone calls through these stations.

Port Operations

Channels 4, 5, 7, 12, 14, 18, 19, 20, 21, 22, 61, 62, 63, 64, 65, 66, 69, 71, 73, 74, 77, 79, 80, 81, 82, 83

Used for directing the movement of ships in or near ports, locks or waterways. Messages must be about operational handling, movement and safety of ships.

Navigational

Channels 13, 67

Channels are available to all vessels. Messages must be about navigation, including passing or meeting other vessels. These are also the main working channels for most locks and drawbridges. You must keep your messages short and power output at no more than 1 watt.

Digital Selective Calling

Channel 70

This channel is set aside for distress, safety and general calling using only digital selective calling techniques. Voice communication is prohibited; your radio cannot transmit voice messages on this channel.



NOTE

The U.S.A. and Canada impose restrictions on the use of many channels within their territorial waters. These are noted in the channel assignment chart. If operating your vessel in the U.S.A. or Canadian waters, consult the national communication authority or a knowledgeable local radio operator for further guidance.



VHF Marine Radio Protocols

VHF Marine Channel Assignments

Channel Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	Transmit	Receive	
01	•	•		156.050	160.650	
01A			•	156.050	156.050	
02	•	•		156.100	160.700	
03	•	•		156.150	160.750	
03A			•	156.150	156.150	
04	•			156.200	160.800	
04A		•		156.200	156.200	
05	•			156.250	160.850	
05A		•	•	156.250	156.250	
06	•	•	•	156.300	156.300	
07	•			156.350	160.950	
07A		•	•	156.350	156.350	
08	•	•	•	156.400	156.400	
09	•	•	•	156.450	156.450	
10	•	•	•	156.500	156.500	
11	•	•	•	156.550	156.550	
12	•	•	•	156.600	156.600	
13	•	•	•	156.650	156.650	1 Watt CAN and USA
14	•	•	•	156.700	156.700	
15			•	Rx Only	156.750	
15	•	•		156.750	156.750	1 Watt INT and CAN
16	•	•	•	156.800	156.800	
17	•	•	•	156.850	156.850	1 Watt CAN



VHF Marine Radio Protocols

VHF Marine Channel Assignments

Channel	Use
01	Public Correspondence (marine operator)
01A	Port Operations and Commercial; VTS in selected areas
02	Public Correspondence (marine operator)
03	Public Correspondence (marine operator)
03A	Government Only
04	Public Correspondence (marine operator); Port Operations; Ship Movement
04A	West Coast (coastguard only); East Coast (commercial fishing)
05	Public Correspondence (marine operator); Port Operations; Ship Movement
05A	Port Operations; VTS in selected areas
06	Intership Safety
07	Public Correspondence (marine operator); Port Operations; Ship Movement
07A	Commercial
08	Commercial (intership only)
09	Boater Calling Channel; Non-Commercial (recreational)
10	Commercial
11	Commercial; VTS in selected areas
12	Port Operations; VTS in selected areas
13	Intership Navigation Safety (bridge-to-bridge); in U.S. waters, large vessels maintain a listening watch on this channel
14	Port Operations; VTS in selected areas
15	Environmental (receive only); used by class C EPIRB's.
15	International (on-board communication); Canada (EPIRB buoys only)
16	International Distress, Safety and Calling
17	State Controlled (U.S.A. only)



VHF Marine Radio Protocols

VHF Marine Channel Assignments

Channel Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	Transmit	Receive	
18	•			156.900	161.500	
18A		•	•	156.900	156.900	
19	•			156.950	161.550	
19A		•	•	156.950	156.950	
20	•	•	•	157.000	161.600	1 Watt CAN
20A			•	157.000	157.000	
21	•	•		157.050	161.650	
21A		•	•	157.050	157.050	
22	•			157.100	161.700	
22A		•	•	157.100	157.100	
23	•	•		157.150	161.750	
23A			•	157.150	157.150	
24	•	•	•	157.200	161.800	
25	•	•	•	157.250	161.850	
26	•	•	•	157.300	161.900	
27	•	•	•	157.350	161.950	
28	•	•	•	157.400	162.000	
60	•	•		156.025	160.625	
61	•			156.075	160.675	
61A		•	•	156.075	156.075	
62	•			156.125	160.725	
62A		•		156.125	156.125	



VHF Marine Radio Protocols

VHF Marine Channel Assignments

Channel	Use
18	Port Operations; Ship Movement
18A	Commercial
19	Port Operations; Ship Movement
19A	Commercial
20	International (port operations, ship movement); Canada (coastguard only)
20A	Port Operations
21	Port Operations; Ship Movement
21A	U.S. (government only); Canada (coastguard only)
22	Port Operations; Ship Movement
22A	U.S. and Canadian coastguard Liaison and Maritime Safety Information Broadcasts that are announced on Channel 16
23	Public Correspondence (marine operator)
23A	Government Only
24	Public Correspondence (marine operator)
25	Public Correspondence (marine operator)
26	Public Correspondence (marine operator)
27	Public Correspondence (marine operator)
28	Public Correspondence (marine operator)
60	Public Correspondence (marine operator)
61	Public Correspondence (marine operator); Port Operation; Ship Movement
61A	U.S. (government only); Canada (coastguard only); West Coast (coastguard only); East Coast (commercial fishing)
62	Public Correspondence (marine operator); Port Operations; Ship Movement
62A	West Coast (coastguard only); East Coast (commercial fishing)



VHF Marine Radio Protocols

VHF Marine Channel Assignments

Channel Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	Transmit	Receive	
63	•			156.175	160.775	
63A			•	156.175	156.175	
64	•	•		156.225	160.825	
64A		•	•	156.225	156.225	
65	•			156.275	160.875	
65A		•	•	156.275	156.275	
66	•			156.325	160.925	
66A		•	•	156.325	156.325	1 Watt CAN
67	•	•	•	156.375	156.375	1 Watt USA
68	•	•	•	156.425	156.425	
69	•	•	•	156.475	156.475	
70	•	•	•	RX only	156.525	
71	•	•	•	156.575	156.575	
72	•	•	•	156.625	156.625	
73	•	•	•	156.675	156.675	
74	•	•	•	156.725	156.725	
77	•	•	•	156.875	156.875	1 Watt CAN
78	•			156.925	161.525	
78A		•	•	156.925	156.925	



VHF Marine Radio Protocols

VHF Marine Channel Assignments

Channel	Use
63	Public Correspondence (marine operator); Port Operations; Ship Movement
63A	Port Operations and Commercial; VTS in selected areas
64	Public Correspondence (marine operator); Port Operations; Ship Movement
64A	U.S. (government only); Canada (Commercial Fishing)
65	Public Correspondence (marine operator); Port Operations; Ship Movement
65A	Port Operations
66	Public Correspondence (marine operator); Port Operations; Ship Movement
66A	Port Operations
67	U.S. (commercial); used for bridge-to-bridge communications in lower Mississippi River (intership only); Canada (commercial fishing), S&R
68	Non-Commercial (recreational)
69	International (intership, port operations, ship movement); U.S. (non-commercial, recreational); Canada (commercial fishing only)
70	Digital Selective Calling (voice communications not allowed)
71	International (port operations, ship movement); U.S. and Canada (non-commercial, recreational)
72	Non-Commercial (intership only)
73	International (intership, port operations, ship movement); U.S. (port operations); Canada (commercial fishing only)
74	International (Intership, Port Operations, Ship Movement); U.S. (port operations); Canada (commercial fishing only)
77	Port Operations (intership only); restricted to communications with pilots for movement and docking of ships
78	Public Correspondence (marine operator)
78A	Non-Commercial (recreational)



VHF Marine Radio Protocols

VHF Marine Channel Assignments

Channel Number	Channel Map			Frequency		Power Limits
	Int'l	Canada	USA	Transmit	Receive	
79	•			156.975	161.575	
79A		•	•	156.975	156.975	
80	•			157.025	161.625	
80A		•	•	157.025	157.025	
81	•			157.075	161.675	
81A		•	•	157.075	157.075	
82	•			157.125	161.725	
82A		•	•	157.125	157.125	
83	•	•		157.175	161.775	
83A		•	•	157.175	157.175	
84	•	•	•	157.225	161.825	
84A			•	157.225	157.225	
85	•	•	•	157.275	161.875	
85A			•	157.275	157.275	
86	•	•	•	157.325	161.925	
86A			•	157.325	157.325	
87		•	•	157.375	161.975	
87	•			157.375	157.375	
87A			•	157.375	157.375	
88		•	•	157.425	162.025	
88	•			157.425	157.425	
88A			•	157.425	157.425	



NOTE

Many of the plain numbered channels, such as 01, 02 and 03, transmit and receive on different frequencies. This is termed duplex operation. The rest of the plain numbered channels and all of the A channels, such as 01A, 03A and 04A, transmit and receive on a single frequency, which is termed simplex operation. Your radio automatically adjusts to these conditions. When in simplex operation, the A icon will appear on the LCD (see illustration on page A2).



VHF Marine Radio Protocols

VHF Marine Channel Assignments

Channel	Use
79	Port Operations; Ship Movement
79A	Commercial (also non-commercial only in Great Lakes)
80	Port Operations; Ship Movement
80A	Commercial (also non-commercial only in Great Lakes)
81	Port Operations; Ship Movement
81A	U.S. (government only; environmental protection operations)
82	Public Correspondence (marine operator); Port Operation; Ship Movement
82A	U.S. (government only); Canada (coastguard only)
83	Canada (coastguard only)
83A	U.S. (government only); Canada (coastguard only)
84	Public Correspondence (marine operator)
84A	Public Correspondence (marine operator)
85	Public Correspondence (marine operator)
85A	Public Correspondence (marine operator)
86	Public Correspondence (marine operator)
86A	Public Correspondence (marine operator)
87	Public Correspondence (marine operator)
87	Public Correspondence (marine operator)
87A	Public Correspondence (marine operator)
88	Public Correspondence (ship to coast); in U.S. only within 121 kilometres of Canadian Border
88	Commercial Intership only
88A	Commercial Intership only



NOTE

All the listed channels are pre-programmed at the factory according to international regulations, those of Industry Canada (Canada) and those of the FCC (U.S.A.). They cannot be altered by the user nor can modes of operation be changed between simplex and duplex.

Installation

Included in this Package

Included in this Package

You should find all of the following items in the package with your CobraMarine™ VHF radio:

Radio



Waterproof Pouch



Operating Instruction Manual



Belt Clip



Wrist Strap



Rechargeable NiMH Batteries

Wall Mount Charger with UK-
Compatible Connector*

For connection to AC wall outlet.

*The charger is to be used for charging purposes only.
It is not to be used during normal operation.

Installation

Wrist Strap, Belt Clip, Spkr/Mic Jack and Waterproof Pouch

Wrist Strap, Belt Clip, Speaker/Microphone Jack and Waterproof Pouch

The radio is shipped with a **Wrist Strap**, **Belt Clip** and **Waterproof Pouch** in the package. The **Speaker/Microphone Jack** can be used with additional accessories. Contact your local CobraMarine™ dealer for optional accessories.

Wrist Strap

Your radio comes with the **Wrist Strap** already attached. It can be easily removed if you choose not to use it.

Wrist Strap



Belt Clip

Use the **Belt Clip** to carry your radio around with you. Simply squeeze the clip and place it where you prefer.

Belt Clip



Wrist Strap, Belt Clip, Spkr/Mic Jack and Waterproof Pouch

Installation

External Speaker/Microphone Jack

Your radio can be fitted with an optional **External Speaker/Microphone** (not included), freeing your hands for other tasks. Contact your local CobraMarine™ dealer for optional accessories.

Speaker/Microphone Tab



To attach the external speaker/microphone:

1. Open the speaker/microphone tab on top of the radio.
2. Insert the plug into the speaker/microphone jack.

Waterproof Pouch

Use the included **Waterproof Pouch** to not only keep your radio dry, but also dust and dirt free.

Waterproof Pouch



To enclose the radio in the waterproof pouch:

1. With the CobraMarine™ logo facing up, slip radio, face up, into opening under Velcro® flap at the bottom of the waterproof pouch.
2. Turn pouch and radio over so that the CobraMarine™ logo is facing down.
3. Roll bottom of pouch (between Velcro® pieces) towards upper piece of Velcro®.
4. Secure bottom piece of Velcro® to upper piece of Velcro®.

Batteries and Charger Jack

Installation

Batteries and Charger Jack

Your radio includes four rechargeable NiMH (Nickel-Metal Hydride) **Batteries** (part No. FA-BP) and a wall mount charger (part No. MRC 100) in the package. Your wall charger is capable of recharging one radio with batteries installed in the battery compartment. A UK compatible connector (part No. MRCA 100) is included if required for use with the wall charger.

You should fully charge the included rechargeable NiMH batteries before using your radio for the first time.



CAUTION

The charger is to be used for charging purposes only. It is not to be used during normal operation.

Remove Belt Clip



Remove Battery Cover



Insert Four Batteries



Installing the Batteries

To install or replace batteries:

1. Remove belt clip by releasing belt clip latch and sliding clip down.
2. Pull down on the battery door latch to remove the battery compartment cover.
3. Insert the rechargeable NiMH batteries (part No. FA-BP) according to polarity markings.
4. Replace battery compartment cover and belt clip.



NOTE

Your radio can also be operated with four standard AAA alkaline batteries. Always use high quality alkaline batteries. Position batteries according to polarity markings.



NOTE

Contact your local CobraMarine™ dealer for optional accessories.



WARNING

Only the rechargeable NiMH batteries (part No. FA-BP) can be recharged.

Batteries and Charger

Charge Tab



Charging the Batteries

To recharge the rechargeable NiMH battery pack in the radio:

1. Insert NiMH batteries (part No. FA-BP) in the battery compartment. (See page 25 for installing batteries.)
2. Open the charge tab on the side of the unit.
3. Insert the plug into the charge jack.
4. Plug the power supply into an electrical outlet, using the supplied UK compatible connector if needed.

A full charge will take approximately 15 hours.
You can leave the unit in trickle charge indefinitely.



NOTE

Your radio can also be operated with four standard AAA alkaline batteries.



WARNING

Only the rechargeable NiMH batteries (part No. FA-BP) can be recharged.

Fully Charged



Maintaining the Battery Charge

As you use your radio, the battery power icon will show the battery power remaining. When the icon shows only one or no segment, it is time to change the batteries.

It is a good idea to keep a set of fresh, high quality alkaline batteries with your radio. Should the rechargeable batteries become discharged and no electrical power source be available, you can insert the alkaline batteries and continue to use your radio until you can return to using the rechargeable ones.

Getting Started

Getting Started

Refer to the foldout on the front cover of this manual to identify the various controls and indicators on your radio.

Throughout this manual you will be instructed to press or to press and hold buttons on the radio. Press means a momentary press, then release; press and hold means to hold the button down.

Whenever you press any button except the **Talk** button on your radio, a brief tone (beep) will sound to confirm the button press. With all button presses, the appropriate icon will appear on the LCD and the backlight will turn **On**. The backlight will stay **On** for five seconds after the button is released.

At times you will hear two other sounds. Two beeps will sound to confirm your setting changes and three beeps will sound to notify you of an error.

Power On-Off

The **On-Off Power/Volume** knob on the top of the radio is held in the **Off** position by a click stop.

On-Off Power/Volume Knob



To turn your radio On:

1. Turn the **On-Off Power/Volume** knob clockwise until you hear and feel a click.

When the radio is powered **On**, a brief tone will sound, the display backlight will turn **On** and the display will show all icons for two seconds. All buttons will be inoperative during these two seconds.

After two seconds, the radio will return to the settings in effect when it was last powered **Off**, the LCD will show the appropriate icons and all controls will be operative. The radio will then be in **Standby** mode.

When first turned **On** or after memory loss, the following defaults will be set:

- Channel 1A
- Transmit power high
- Frequency channel map set to international
- Battery indicator set

To turn your radio Off:

1. Turn the **On-Off Power/Volume** knob all the way anticlockwise until you hear and feel a click.

On-Off Power/Volume Knob



Operating Your Radio

Getting Started

On-Off Power/Volume Knob



Volume

The **On-Off Power/Volume** knob also controls the speaker **Volume**. The **Volume** adjustment applies only to what you hear from the speaker and does not affect the **Volume** of your outgoing messages, which is controlled by the circuitry of your radio.

To increase the volume:

1. Turn the **On-Off Power/Volume** knob clockwise.

To decrease the volume:

1. Turn the **On-Off Power/Volume** knob anticlockwise.

Power Saver Icon



Power Saver

Your radio has a unique circuit designed to extend battery life. If there are no transmissions within ten seconds, the radio will automatically switch to **Power Save** mode and the **Save** icon will flash in the LCD. This will not affect the radio's ability to receive incoming transmissions.

UIC Button



Active Channel Map Icon



International/Canada/U.S.A. Channel Maps

Three sets of VHF **Channel Maps** have been established for marine use internationally, in Canada and in the U.S.A. Most of the channels are the same for all three maps, but there are definite differences (see information on pages 12 – 21). Your radio has all three maps built into it and will operate correctly in whichever area you choose.

To set your radio for the area in which you will be using it:

1. From **Standby** mode, press and hold the **UIC** button. The **U**, **I**, or **C** icon will blink on the LCD. Repeat step 1 to shift to the next channel map(s).

Operating Your Radio

Getting Started

Channel Up or Down Buttons



Currently On Channel 88



Channels

Your radio will receive and transmit VHF signals on the **Channel** indicated on the LCD. You can change the **Channel** at any time using the **Channel Up** and **Channel Down** buttons.

To change channels:

1. Press the **Channel Up** or **Channel Down** button. If you are on Channel 88, pressing the **Channel Up** button will advance to Channel 1. If you are on Channel 1, pressing the **Channel Down** button will advance to Channel 88.

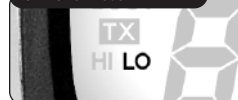
You can hold the **Channel Up** or **Channel Down** button for fast advance.

The beep sound will occur only at the first press of the button and not during fast advance.

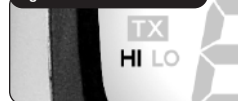
If the new channel selected is restricted to low power, the radio will automatically switch to Low Power mode and the Low Power icon will appear on the LCD.

If the radio is in the **Key Lock** mode, the channel will not change and the three-beep error signal will sound.

Low Power Mode



High Power Mode



High/Low Power – Lock Button



Transmit Power Output

Your radio can **Transmit** selectively at $\frac{1}{2}$ or 2 watts of power. Cobra Electronics Corporation™ suggests you maintain the low power setting for short-range communications, to conserve battery life and to avoid overpowering nearby stations with your signal. Use the high power setting for long-range communications or when you do not receive a response to a signal sent at $\frac{1}{2}$ watt.

To toggle between the High and Low Power modes:

1. Press the **High/Low Power – Lock** button. The LCD will show which mode is in effect.

Operating Your Radio

Getting Started

Operating Your Radio

Standby/Receive and Transmit

Backlight/Monitor Button



Backlight

The LCD will be illuminated by the **Backlight** whenever the **Backlight/Monitor** button is pressed. It will remain **On** for ten seconds. If a button on the front panel is pressed while the **Backlight** is **On**, it will remain **On** for ten seconds after that button is pressed.

Locked Buttons

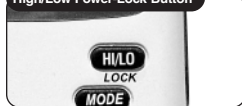


Key Lock

To prevent accidental changes to your settings, you can **Lock**:

- Channel 16 Button
- Channel Up Button
- Channel Down Button
- High/Low Power Feature
- Mode Button
- UIC Button

High/Low Power-Lock Button



To lock or unlock the buttons:

1. Press and hold the **High/Low Power-Lock** button for three seconds. The **Lock** icon will appear or disappear in the LCD.

Key Lock Icon



When key lock is **On**, pressing any of the listed buttons on the front of the radio will result in a three-beep error message. Both the **Backlight/Monitor** button and the **Talk** button are active — you can receive or transmit a message with key lock **On**, but you cannot change the channel.

Standby/Receive and Transmit

Standby and Receive

Standby mode is the usual mode for the radio whenever it is turned **On**. From this mode, you can change your settings using the buttons on the front of the radio and switch to **Transmit** mode using the **Talk** button. Signals will be **Received** on the selected channel(s) and alerts broadcast by the coastguard will activate the corresponding routines in your radio.



NOTE

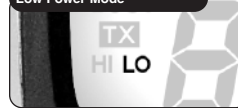
Coastguard alerts are broadcast on Channel 16.

While in **Standby** mode, you will receive any messages sent on the channel to which you are tuned.

Check Channel Number



Low Power Mode



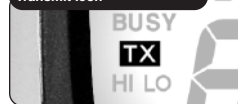
5 cm from Mouth



Talk Button



Transmit Icon



Transmit

Transmit mode gives you the ability to interact with safety services, other vessels and shore stations. When you use this capability, be sure to follow the procedures and to observe the courtesies that govern its use so everyone benefits. (See pages 12 – 21 to help you select the proper channels.)

To transmit a message:

1. Check to see that your radio is set to a proper channel for the type of message you plan to send.
2. Toggle to the low power setting.
3. With the microphone about 5 cm from your mouth, press and hold the **Talk** button and speak into the microphone. The **Transmit** icon will appear on the LCD.
4. Release the **Talk** button when you have finished speaking. Your radio can only operate in either the **Transmit** or the **Receive** mode at any given time. You will not hear the response to your message unless the **Talk** button is released.

When the last segment disappears from the **Battery Power** icon, the battery outline of the icon will start to blink to indicate very little power is left. The radio will still transmit until the battery voltage drops below the minimum required to operate the radio.

Operating Your Radio

Advanced Operation

Advanced Operation



Channel 16

This function gives you quick access to the calling **Channel 16** from any operational mode.

To switch to Channel 16:

1. Press the **Channel 16** button to change to Channel 16. To exit the **Channel 16** mode and return to whatever status existed before entering this mode, press the **Channel 16** button a second time.

While in the **Channel 16** mode, you can also press the **Channel Up** and **Channel Down** buttons to change channels. If the radio is in the **Key Lock** mode, the channel will not change and the three-beep error signal will sound.

Channel Scan

During **Channel Scan**, the radio will rapidly switch from channel to channel. Whenever any activity is detected, the radio will stop the scan for ten seconds to allow you to listen briefly on that channel. It will then continue to scan unless you switch out of the **Scan** mode.



To enter channel scan:

1. Press the **Mode** button until the **Scan** icon flashes on the display.
2. Press the **Channel Up** or **Channel Down** button to begin scanning channels.

The radio will immediately begin to scan the entire channel map selected in the active channel map. The **Scan** icon will show on the LCD.



NOTE

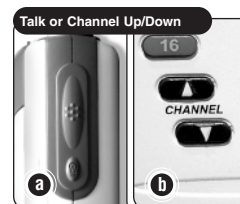
The radio's operation will be suspended indefinitely until the **Channel Up** or **Channel Down** button is pressed while the **Scan** icon is flashing.

To exit channel scan:

1. From **Scan** mode, press the **Talk** button. This will return the radio to **Standby** mode on the last scanned channel.

Operating Your Radio

Advanced Operation



During channel scan (while receiving an incoming transmission), you can choose from the following:

- a. Press the **Talk** button to remain on that channel and end scanning. This will return the radio to **Standby** mode.
- b. Press the **Channel Up** or **Channel Down** button to resume scanning channels.

If you do not press any buttons within ten seconds, your radio will automatically resume scanning channels.

During channel scan (while not receiving a transmission), you can choose from the following:

- a. Press the **Talk** button to communicate on the last memory location scanned and return to **Standby** mode.
- b. Press the **Channel Up** or **Channel Down** button to change scan direction.

Keystroke Tones

With **Keystroke Tones** turned **On**, your radio will sound beeps each time you press a button or change a setting.



To turn keystroke tones On or Off:

When you turn your radio **On** for the first time, keystroke tones will be **On**.

1. Press the **Mode** button until the **Keystroke Tones** icon flashes on the display. The current **On** or **Off** setting is displayed.
2. Press the **Channel Up** or **Channel Down** button to turn keystroke tones **On** or **Off**.
3. When your desired **Keystroke Tone** mode setting is displayed, choose one of the following:
 - a. Press the **Mode** button to enter the new setting and proceed to other functions.
 - b. Press the **Talk** button to enter the new setting and return to **Standby** mode.

The setting you select will be saved when you turn your radio **Off** and **On** again. When keystroke tones are **On**, the **Keystroke Tone** icon will be displayed.



Operating Your Radio

Maintenance

Maintenance

Very little maintenance is required to keep your CobraMarine™ VHF radio in good operating condition.

- Keep the radio and charger clean by wiping with a soft cloth and mild detergent. Do not use solvents or harsh or abrasive cleaners, which could damage the case or scratch the LCD screen.
- If the radio is exposed to salt water, wipe with a soft, moist cloth at least once a day to prevent build-up of salt deposits, which could interfere with button operation.
- If the radio will be stored for a long period, such as over the winter, remove the batteries from the battery compartment and store them in a separate package. This is especially so if you are using alkaline batteries.



Operating Your Radio

Troubleshooting

Troubleshooting

Problem	Possible Cause(s)	Solution(s)
No display on LCD when radio is turned On	Batteries are exhausted Batteries not installed properly	Replace or recharge batteries Remove batteries and reinstall according to polarity markings
NiMH batteries run down quickly	Batteries are at the end of their life	Replace with new batteries
Will transmit at ½ watt, but not at 2 watts	Batteries are low Selected channel is limited to 1 watt	Replace or recharge batteries Switch to another channel
Will not transmit	Selected channel is limited to receive only	Switch to another channel
No sound from speaker	Volume level is too low	Re-adjust volume
No response to button press	Button Lock is On	Press and hold High/Low Power-Lock button
No answer to calls	Out of range of other station Signal is blocked by terrain	Switch to 2 watts or move closer Move until you have a “line-of-sight” to the other station

Operating Your Radio

Specifications

Specifications

General	
Frequency Range: TX	156.025 to 157.425 MHz
Frequency Range: RX	156.050 to 163.275 MHz
Number of Channels	All International, Canadian and U.S.
Channel Spacing	25 kHz
Modulation	16 KOF3E
Input Voltage	6 VDC
Battery Life: 5% TX, 5% RX, 90% Stand-by	Alkaline Batteries: 20 Hours @ 2 Watts, 24 hours @ ½ Watt
Current Drain: Stand-by Receive Transmit	10 mA 35 mA 700 mA @ High power 200 mA @ Low
Temperature Range	-20°C to 60°C
Radio Dimensions W x D x H	54.1 mm x 30.5 mm x 222.8 mm (including antenna)
Radio Weight	113.5 g (without batteries)
Receiver	
Frequency Range	156.050 to 163.275 MHz
Receiver Type	Double Conversion Super-Heterodyne
Sensitivity: 20 dB Quieting 12 dB Sinad	0.35 uV 0.30 uV
Adjacent Channel Selectivity	-50 dB
Intermodulation and Rejection	-60 dB
Spurious and Image Rejection	-50 dB
AF Output	250 mW @ 8 Ohms
Transmitter	
Frequency Range: TX	156.025 to 157.425 MHz
RF Output Power	½ Watt and 2 Watts
Spurious Emissions	-60 dB High -55 dB Low
Microphone Type	Condenser
External Microphone Impedance	1000 Ohms
Frequency Stability	+/-10 ppm
FM Hum and Noise	-45 dB

Declaration of Conformity and CE Marking

Operating Your Radio

Declaration of Conformity

We, the Manufacturer/Importer
Cobra Electronics Europe Limited
Dungar House
Northumberland Avenue
Dun Laoghaire
County Dublin, Ireland,

Declare under our sole responsibility that the following product

Portable Marine Radio : MRHH100EU

To which this declaration relates, is in conformity with the following standards and/or other normative documents.

Safety (R&TTE, Article 3.1a)

EN 60950 : 2000

(Identification of Regulations/Standards)

EMC (R&TTE, Article 3.1b)

EN301 843-1 V1.2.1 (2003-04)

EN301 843-2 V1.2.1 (2003-04)

(Identification of Regulations/Standards)

Radio Spectrum (R&TTE, Article 3.2)

EN301 178-1 V1.2.1 (2003-12)

EN301 178-2 V1.1.1 (2003-08)

(Identification of Regulations/Standards)

We hereby declare that the all essential radio tests suites have been carried out and that the above named product is in conformity with all the essential requirements.

April 28, 2004



Manufacturer/Authorized Representative
Dublin Ireland
MIKE KAVANAGH

CE Marking

This radio is marked **CE 0682** adjacent to the serial number.

That means that this radio:

1. Complies with the essential requirements of the European Radio and Telecommunication Terminal Directive 1999/5/EC.
2. May operate in some non-harmonised frequency bands and/or may be subject to licensing conditions in the country of use.

The user should be sure to check that the model and programming of this radio complies with his or her national licensing requirements.